

Appl. No.: 10/716,892  
Amdt. Dated: December 29, 2005  
Reply to Office Action of: September 29, 2005

### REMARKS

Claims 1-21 remain in this application. Claims 19-21 have been allowed. Claims 2, 3, 5, 10-15, 17 and 18 are indicated to be allowable if rewritten to avoid dependence from a rejected base claim. Claims 1, 4, 6-9 and 16 currently stand rejected as obvious over Beeson (US Pat. No. 6,600,597) in view of Fajardo (US Pat. App. No. 2003/0231846).

#### Non-Obviousness

Applicants respectfully submit that the Examiner has not established a prima-facie case of obviousness because the Beeson and Fajardo references are not properly combinable. This is because the references themselves lack motivation to combine, and because Beeson teaches away from combining Beeson and Fajardo.

The Examiner states that the "motivation for so doing [combining the references] would have been to reduce nonlinearity." At paragraph 6, the paragraph cited by the Examiner, Fajardo states that "[a]s the light is guided in a gaseous medium, hollow-core fiber may have extremely low non-linearity." But the Beeson reference does not teach or suggest a need to reduce non-linearity of its disclosed device. Thus there would have been no motivation from the references to seek out Fajardo or any similar technology to modify Beeson.

Moreover, one significant aspect of the technology disclosed in Beeson is to provide "good overlap" of pump and signal wavelengths "through[out] the gain medium", and to maximize the "size of the gain medium" to provide "greater amplification per length of the gain medium." This is accomplished, according to Beeson, by providing a photonic-crystal based waveguide having a relatively large core diameter, in which both the signal and the pump wavelengths propagate as single modes, and in which the core is provided with gain. Beeson specifically contrasts this aspect of

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the Beeson disclosure from other devices in which "the size of the gain medium is limited." See, for example, column 3, lines 11-28 and column 4, lines 6-12.

From the teaching of Beeson, therefore, one of ordinary skill would be motivated to maximize the size of the gain medium, or the volume in which gain takes place. Using a hollow-core light guide generally prevents the main central portion of the waveguide from being part of the gain medium, thus limiting the "amplification per length of the gain medium" and going contrary to the teaching of Beeson. Accordingly, not only is there no suggestion to combine the Beeson and Fajardo references, but also Beeson itself tends to teach away from such combination.

For at least these reasons, the claims as pending are believed to be non-obvious and patentable over the art of record.

#### Statement of Common Ownership

In addition to the foregoing, the Fajardo reference is not available as a reference against the present application. **This is because the present application, Application No. 10/716,892, and the Fajardo reference, US Pat. App. No. 2003/0231846, were, at the time the invention of Application No. 10/716,892 was made, owned by Corning Incorporated, the assignee of the present application.** For this additional reason, the currently pending claims are believed to be allowable.

#### Conclusion

Based upon the above remarks, applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Applicant believes that no extension of time is necessary to make this Response timely. Should applicant be in error, applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Reply


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timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to Greg Bean at 607-974-2698.

Respectfully submitted,

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